

PATENT  
USSN 09/432,503  
015389-002611US; 018/063c

CLAIM AMENDMENTS

1 to 40. CANCELLED

41. (*Currently amended*) A method of increasing the proliferative capacity of a mammalian cell expressing telomerase RNA component, comprising introducing into the cell *in vitro* a recombinant polynucleotide that encodes a telomerase-reverse transcriptase protein comprising SEQ. ID NO:2, or fragment of SEQ. ID NO:2 that contains the telomerase T motif:

Trp-X<sub>12</sub>-Phe-Phe-Tyr-X-Thr-Glu-X<sub>10-11</sub>-Arg-X<sub>3</sub>-Trp-X<sub>7</sub>-Ile (SEQ. ID NO:119)

wherein X<sub>n</sub> is a number "n" of unspecified amino acids each chosen independently;  
wherein the encoded protein has telomerase catalytic activity when complexed with a telomerase RNA component, and  
whereby introducing the recombinant polynucleotide into the cell increases the proliferative capacity of the cell.

42. (*Previously presented*) The method of claim 41, wherein the cell is a human cell.
43. (*Previously presented*) The method of claim 41, further comprising selecting a cell that expresses increased telomerase catalytic activity as a result of introducing the polynucleotide.
44. (*Previously presented*) The method of claim 43, wherein the cell is a human cell.
45. (*Previously presented*) The method of claim 41, wherein the polynucleotide encodes a full-length telomerase reverse transcriptase.
46. (*Previously presented*) The method of claim 45, wherein the cell is a human cell.
47. (*Previously presented*) The method of claim 45, further comprising selecting a cell that expresses increased telomerase catalytic activity as a result of introducing the polynucleotide.
48. (*Previously presented*) The method of claim 41, wherein the polynucleotide comprises the telomerase reverse transcriptase encoding sequence of SEQ. ID NO:1.
49. (*Previously presented*) The method of claim 48 wherein the cell is a human cell.

PATENT  
USSN 09/432,503  
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50. *(Previously presented)* The method of claim 48 further comprising selecting a cell that expresses increased telomerase catalytic activity as a result of introducing the polynucleotide.
51. *(Previously presented)* The method of claim 50 wherein the cell is a human cell.
52. *(Previously presented)* The method of claim 41, wherein the recombinant polynucleotide is an expression vector.
53. *(Previously presented)* The method of claim 52 wherein the expression vector is an SV40 virus expression vector, an EBV expression vector, a herpesvirus expression vector, or a vaccinia virus expression vector.
54. *(Previously presented)* The method of claim 52 wherein the expression vector is a retrovirus expression vector.
55. *(Previously presented)* The method of claim 52 wherein the expression vector is an adenovirus expression vector.
56. *(Previously presented)* The method of claim 52 further comprising selecting a cell that expresses increased telomerase catalytic activity as a result of introducing the polynucleotide.
57. *(Previously presented)* The method of claim 52 wherein the cell is a human cell.

PATENT  
USSN 09/432,503  
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58. (*Currently amended*) A method of increasing the proliferative capacity of a mammalian cell expressing telomerase RNA component, comprising contacting the cell with an adenovirus vector that expresses a DNA sequence encoding a telomerase-reverse transcriptase protein containing the telomerase T motif:

Trp-X<sub>12</sub>-Phe-Phe-Tyr-X-Thr-Glu-X<sub>10..11</sub>-Arg-X<sub>3</sub>-Trp-X<sub>7</sub>-Ile (SEQ. ID NO:119)

wherein X<sub>n</sub> is a number "n" of unspecified amino acids each chosen independently;

wherein the DNA sequence hybridizes to a sequence complementary to SEQ. ID NO:1 at 5°C to 25°C below T<sub>m</sub> in aqueous solution at 1 M NaCl;

wherein T<sub>m</sub> is the melting temperature of double-stranded DNA having the sequence of SEQ. ID NO:1 under the same reaction conditions; and

wherein the encoded protein has telomerase catalytic activity when complexed with a telomerase RNA component; and

whereby introducing the recombinant polynucleotide into the cell increases the proliferative capacity of the cell.

59. (*Previously presented*) The method of claim 58, wherein the cell is a human cell.

60. (*Previously presented*) The method of claim 58, wherein the DNA sequence encodes a full-length telomerase reverse transcriptase.

61. (*Previously presented*) The method of claim 58, wherein the DNA sequence comprises the telomerase reverse transcriptase encoding sequence of SEQ. ID NO:1.

62. (*Previously presented*) The method of claim 58, wherein the DNA sequence encodes SEQ. ID NO:2 or a fragment of SEQ. ID NO:2 having telomerase catalytic activity when complexed with a telomerase RNA.

**63-64. CANCELLED**

65. (*Previously presented*) The method of claim 62, wherein the cell is an epithelial cell.

66. (*Previously presented*) The method of claim 62, wherein the cell is a keratinocyte.

67. (*Previously presented*) The method of claim 62, wherein the cell is a hair matrix or hair shaft cell.

PATENT  
USSN 09/432,503  
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68. *(Previously presented)* The method of claim 62, wherein the cell is a hepatocyte.
69. *(Previously presented)* The method of claim 62, wherein the cell is an endothelial cell.
70. *(Previously presented)* The method of claim 62, wherein the cell is a cell of the ciliary epithelium of the eye.
71. *(Previously presented)* The method of claim 62, wherein the cell is a cementoblast, odontoblast, osteoblast, or chondrocyte.
72. *(Previously presented)* The method of claim 62, wherein the cell is a heart cell.
73. *(Previously presented)* The method of claim 62, wherein the cell is a lymphocyte.
74. *(Previously presented)* The method of claim 41, wherein the cell is an epithelial cell.
75. *(Previously presented)* The method of claim 41, wherein the cell is a keratinocyte.
76. *(Previously presented)* The method of claim 41, wherein the cell is a hair matrix or hair shaft cell.
77. *(Previously presented)* The method of claim 41, wherein the cell is a hepatocyte.
78. *(Previously presented)* The method of claim 41, wherein the cell is an endothelial cell.
79. *(Previously presented)* The method of claim 41, wherein the cell is a cell of the ciliary epithelium of the eye.
80. *(Previously presented)* The method of claim 41, wherein the cell is a cementoblast, odontoblast, osteoblast, or chondrocyte.
81. *(Previously presented)* The method of claim 41, wherein the cell is a heart cell.
82. *(Previously presented)* The method of claim 41, wherein the cell is a lymphocyte.
- 83-91. CANCELLED